

# ***NAVSEA TMDE Initiatives***

***Reengineering  
for the 21st Century***

**Briefing for Fleet Logistics Support Improvement Conference**

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## **Our Goal**

**To provide our Fleet and Shore customers with a modernized, cost effective, and responsive TMDE acquisition and life-cycle support program that increases the overall quality of afloat and ashore TMDE in support of prime equipment and systems**

***The NAVSEA TMDE program is aligned with DOD and NAVSEAs Acquisition Streamlining processes and initiatives to attain best value to the Navy***

# Key Terms

- **TMDE (Test, Measurement and Diagnostic Equipment)** - Mechanical, electrical and electronic, automatic and manual, and portable; installed in a fixed location, or built into a prime system/ equipment used in R&D, production, quality evaluation, operation monitoring and maintenance.
  - **General Purpose Electronic Test Equipment (GPETE)** - Electronic test equipment used in planned and corrective maintenance actions on two or more systems/equipment's of basically different designs
  - **Calibration Standards (CAL STDs)** - A measurement device of known, traceable accuracy (to NIST Standards) used to perform a comparison or verification on equipment of unknown/unverified accuracy to ensure conformance to operational specifications
- **NDE (NAVSEA Data Environment)** - A NAVSEA initiative to develop and enterprise data model to integrate and merge existing maintenance and logistics data structures into a system design
  - **Test Equipment Management Information System (TEMIS)** - A set of NDE-compliant modules that integrate with CDMD-OA and NDE
- **TRRB (TMDE Requirements Review Board)** - Purpose is to assess and prioritize requirements. Comprised of TYCOMs, Shore commands, PEOs, PMs, ISEAs and TMDE key representatives

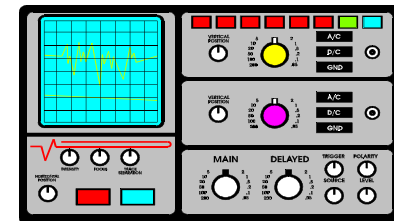
# Prime Equipment/GPETE/CAL STDS Relationship



**PRIME  
EQUIPMENT**



**GPETE**

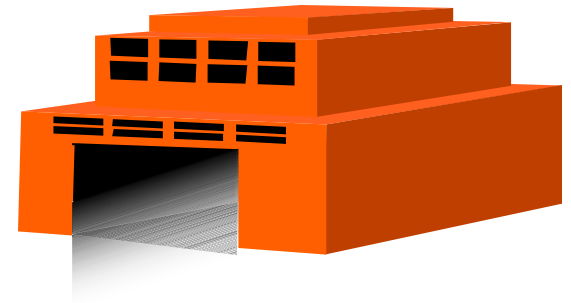
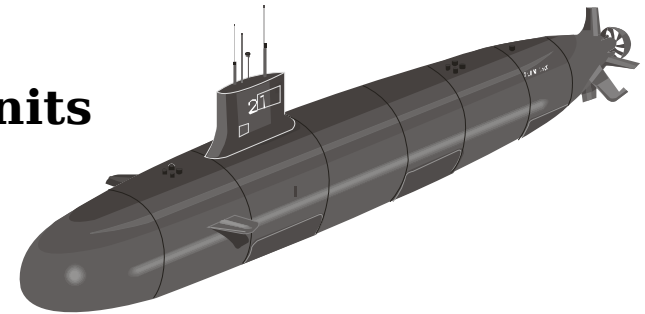
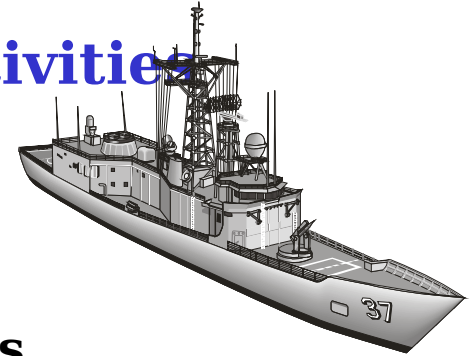


**CAL STDS**

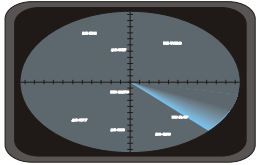
# TMDE Program Fleet Support

- **Approximately 600 Fleet/Shore Activities**

- **Ships**
- **Submarines**
- **SIMAs**
- **Mobile Inshore Undersea Warfare Units**
- **Naval Security Groups**
- **Naval Communication Stations/Units**
- **Naval Air Stations & Air Wings**
- **Naval Space Surveillance Units**
- **Undersea Surveillance Units**
- **Naval Reserve Centers**
- **Marine Air groups**



# NAVSEA TMDE Prime System Support



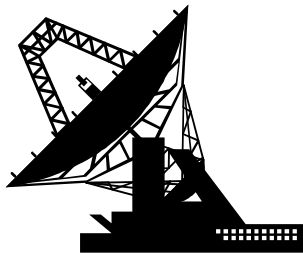
## **Combat Systems**

SPY-1 Radar  
SSDS MK1  
Tomahawk  
M-86 Gun



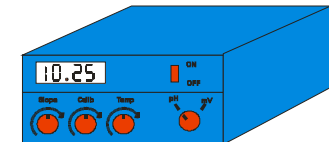
## **Navigation**

Radar's  
Sonar's  
ATC



## **Communications (C4I) Systems**

EHF (LDR,MDR,HDR) SATCOM  
SHF (AN/WSC-6(V) SATCOM  
UHF (AN/WSC-5 &3 (V) SATCOM  
LINE OF SIGHT (LOS)



## **Safety/Environmental**

Heat stress tests  
Dew-Point Indicator  
Shock & Vibration

# Business Process

## Reengineering Actions

- **June 97:**

- NAVSEA 04 directed a Charter Working Group Study
- Final Report contained 33 recommendations to streamline business processes in the areas of:
  - Requirements determination
  - Acquisition
  - Allowancing
  - Delivery
  - Storage and asset management
  - Program management
- Recommendation Status
  - Closed/Completed: 22
  - Work in progress: 11

- **January 98:**

- OPNAV Resource Sponsors (N43, N6, N096, N86, N87, N88) concurred with and support NAVSEA 04Ls re-engineering initiatives

# Business Process Reengineering Actions

- **September 98:**
  - Established GPETE/CAL STDs In-Service Engineering Agent (ISEA) at PHD to focus on implementing total life-cycle management and technical support for the TMDE Program
- **January 99:**
  - RMIB tasked NAVSEA 04L to pursue inventory consolidation of GPETE/CAL STDs materials and re-distribution functions
- **November 99:**
  - POM-02 obsolete replacement issues submitted
  - Received concurrence by all sponsors to support issues pending final budget approval
- **March 00**
  - Offline SPETERL document process fully automated in TEMIS module
  - Testing use of Type II and Type III records for test equipment data



# TMDE Fleet Support

## READINESS

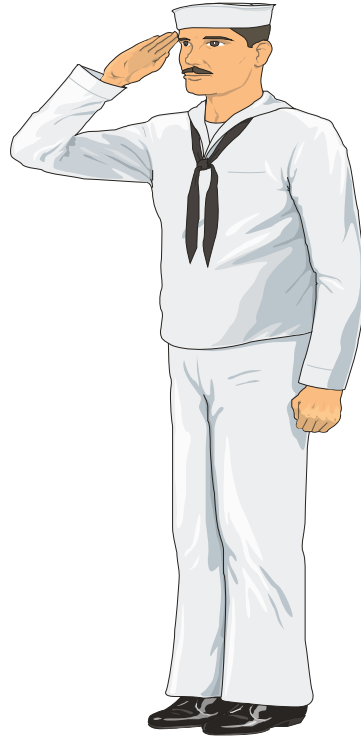


- Increases readiness due to modernization of TE
- Traceability of TE to actual requirements IAW NIST standards for prime system maintenance requirements
- A single point of contact for TMDE program support

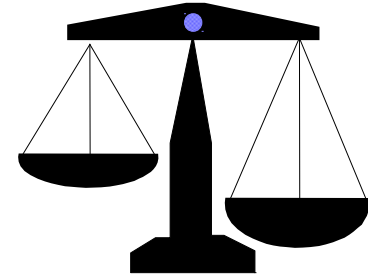
**Cost Benefit**



- Reduction in regional maintenance actions and repair costs
- Decreasing the acquisition and procurement process from 3 years to a goal of same-year procurement
- Reduced storage and warranty costs



## WORKLOAD REDUCTION



- Extended calibration intervals
- Just-in-time delivery and direct delivery of test equipment
- Supporting the removal of shipboard Field Calibration Activities (FCAs)

**AUTOMATION**



- Greater reliability/accountability of both TE and the weapon systems it supports
- Replacement of obsolete equipment with more reliable multi-function models
- Greater degree of data automation and connectivity to automated information systems

# TMDE Life Cycle Management

- **ISEA**

- A single POC for all TMDE engineering, acquisition and logistics matters
- Ensures a partnership within the NAVSEA TMDE community

- **Standardization Matrix**

- Consolidates performance parameters, ensures accuracy and standardization of requirements from multiple systems, and reduces process redundancies and excess equipment

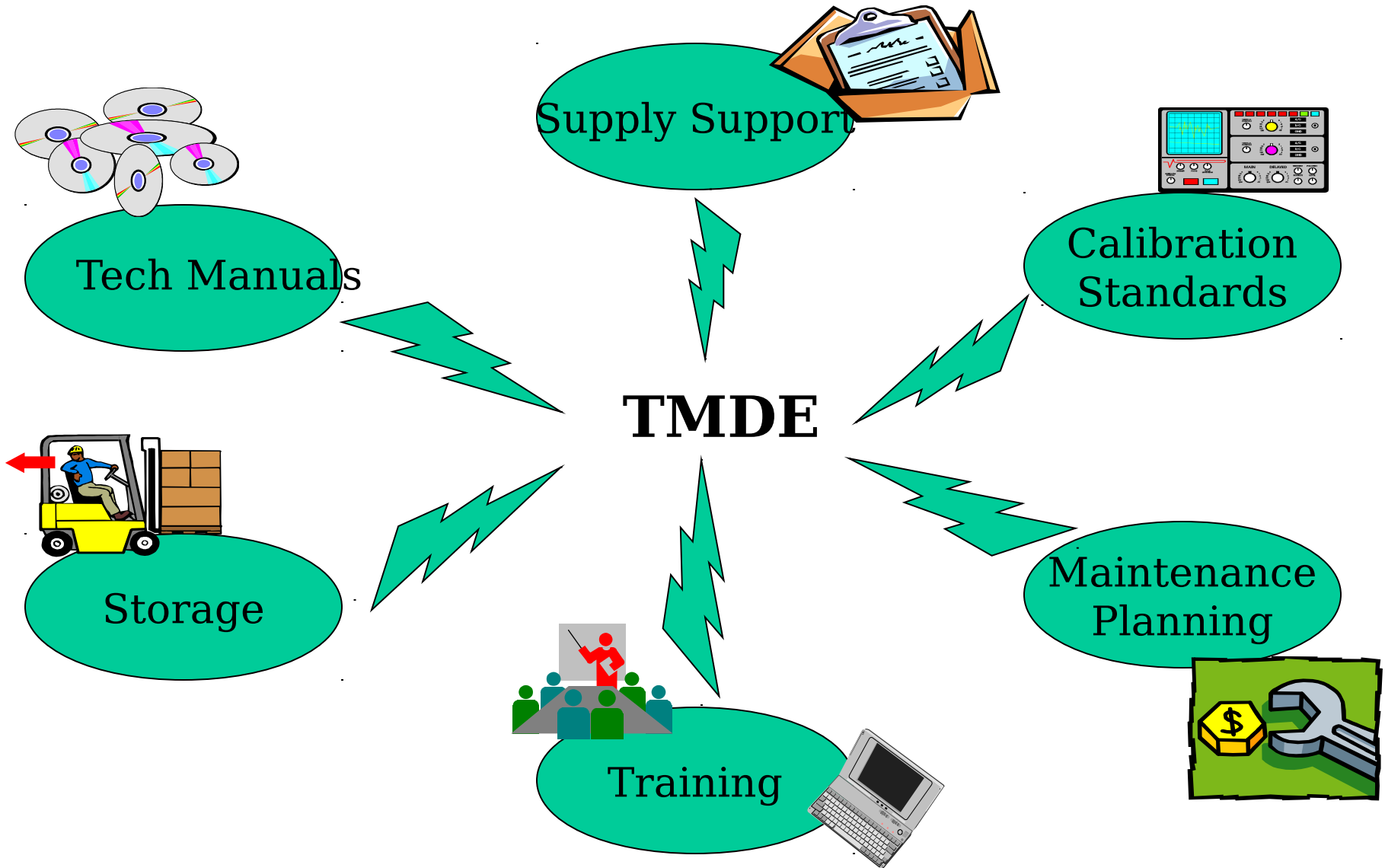
- **Inventory Management**

- Data calls to all Navy activities
- Consolidation of storage and disparate data bases

- **Support equipment**

- Identifying support to Regional Calibration Centers to support NAVSEA workload
- Assessing rotatable pool pilot program w/SUBPAC to improve inventory management and increase equipment availability

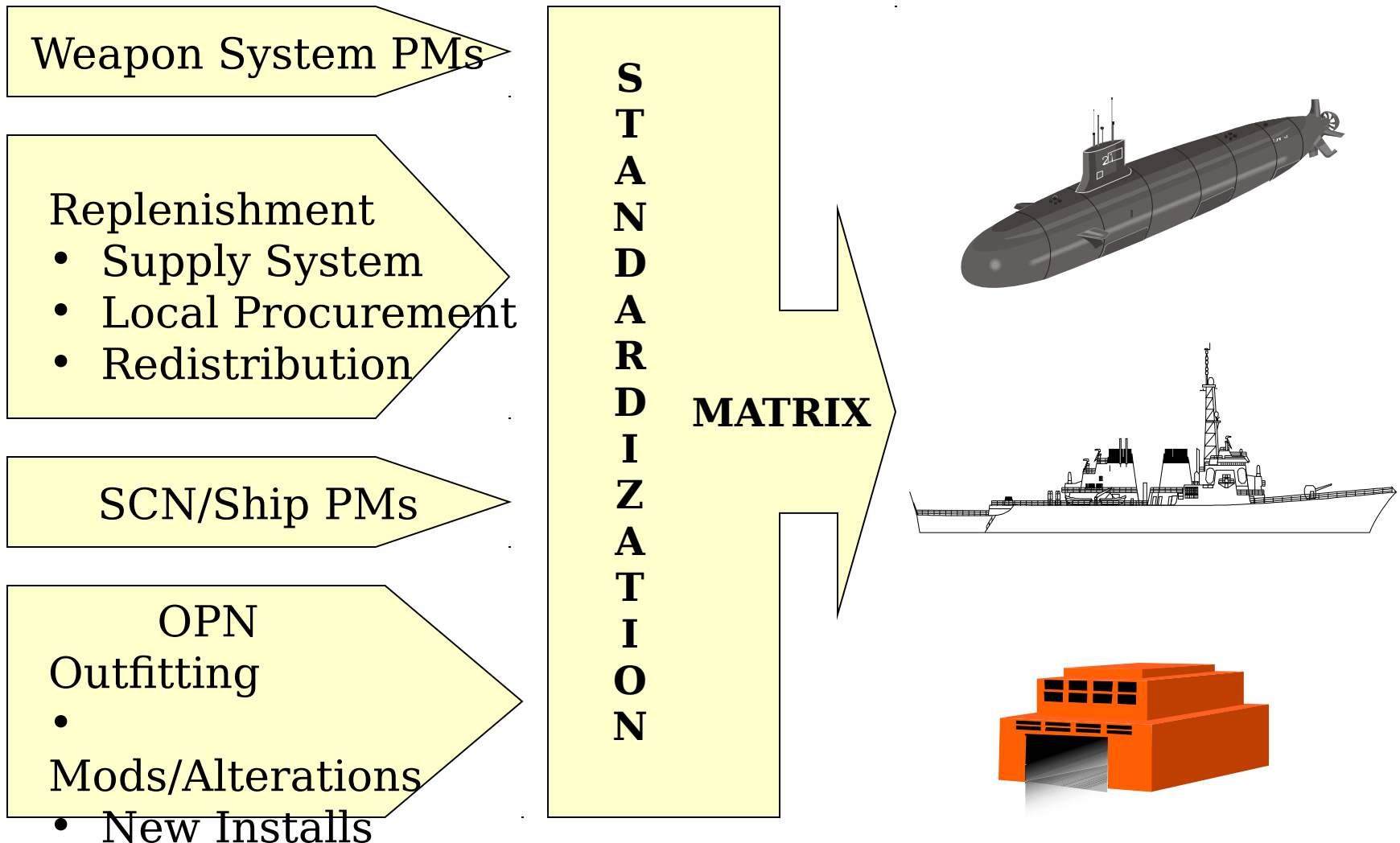
# TMDE Life Cycle Support



# Requirements Standardization Model

## TMDE PROCUREMENT SOURCES

## CUSTOMERS



# Obsolescence

- **Obsolete**

- Denotes equipment assigned to a SCAT that no longer performs the test and calibration requirements of the multiple prime equipment to which it was assigned or has reached a time and cost threshold

- **Action item from TMDE Life Cycle Support Conference of 22-25 June 1999**

- TYCOMs identified a high percentage of obsolete shipboard test equipment that required replacement to reduce the associated maintenance costs
- NSWC-PHD assessed inventory and \$ impact and replacements
- NASEA 04L submitted POM-02 replacement plan by Battle Group

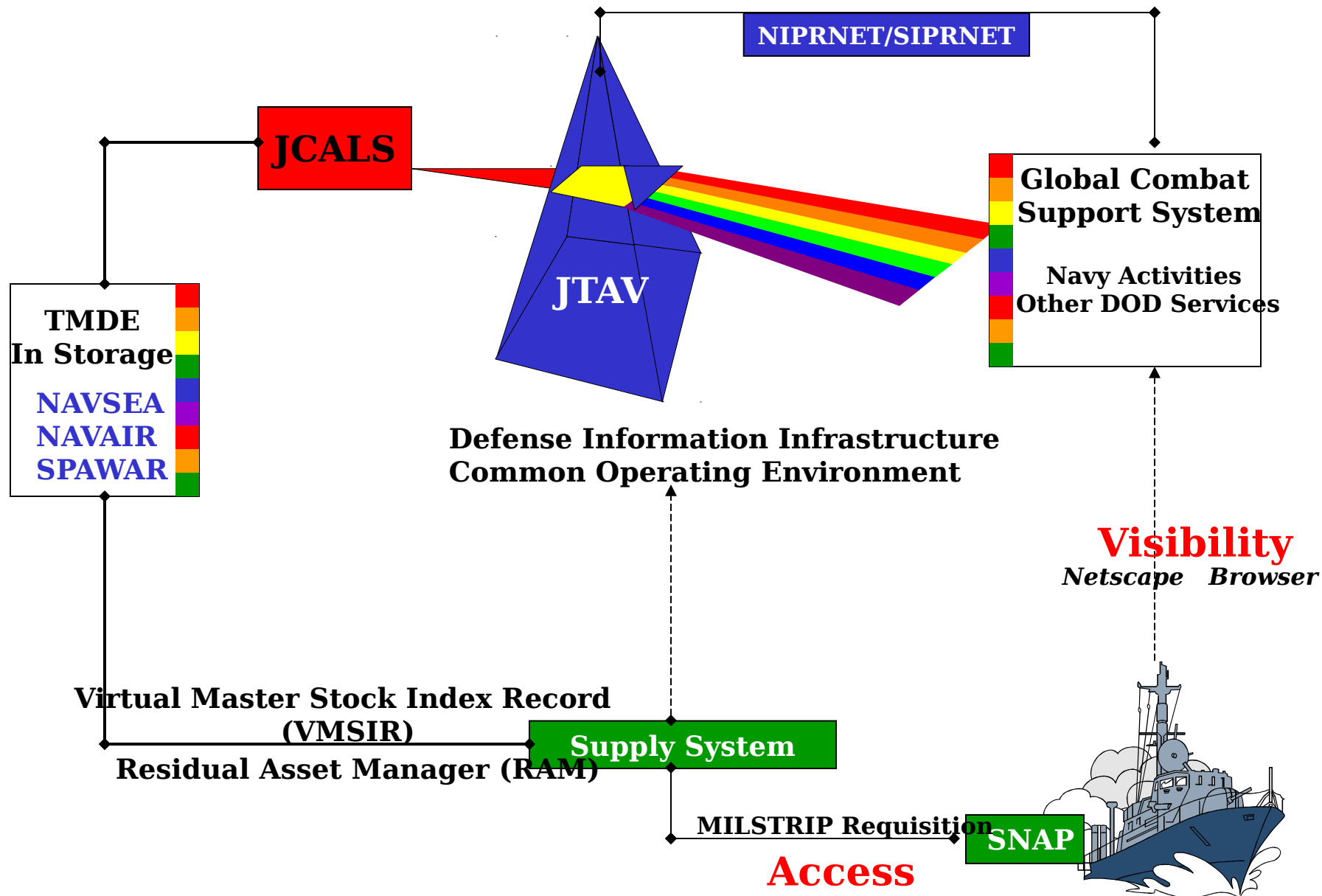
- **Management Plan (In Draft)**

- Establishes guidelines to reduce obsolete equipment in the Navy's inventory, define factors for orderly retirement and replacement, and develops methods to project replacement and funding requirements.

# **Obsolete Equipment Management Plan**

- **Establish orderly replacement process for TMDE based on predicted life-cycle**
  - Validate inventory and condition
  - Send unserviceable equipment to disposal
- **Establish performance metrics to assess obsolescence**
  - Frequency of repair/recalibration
  - Cost to repair
  - Diminishing Manufacturer's Resources
- **Standardize TMDE**
  - Procurement of multi-function/range models to facilitate equipment retirement
  - Assignment of projected life-cycle for new procurements
- **Funding**
  - Project out-year replacement funding requirements based on performance and life-cycle metrics

# TMDE Total Asset Visibility Vision



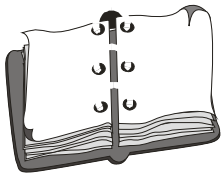
# TMDE ALLOWANCE REPORTING

**GOAL: Provide allowance quantity, inventory quantity, prime system links and substitute equipment**

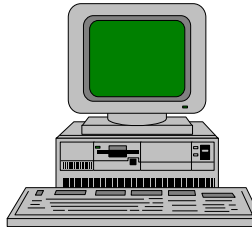
## SPETERL

## COSAL/SNAP

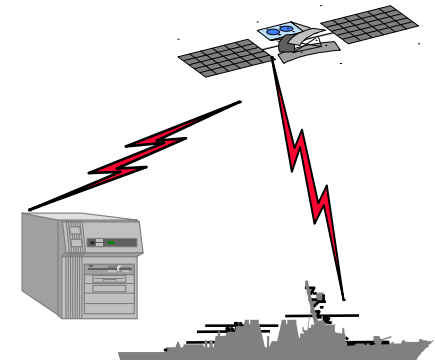
## NDE/TEMIS



**Prototyping Type II  
and III records**



**Completing  
TEMIS Module**



- Delivered to ships independent of COSAL/SNAP process
- Originally a paper document; Later converted to disk
- Labor intensive and costly process
- ~400 SPETERLs/year
- No real-time allowance information or automated updates

- COSAL is primary allowance document for a ship
- Lists all systems and equipment installed and defines allowances for storeroom items and Operating Space Items (OSI)
- SNAP does not identify GPETE as a unique configuration item
- Originally prototyped standard requisitioning and OSI retrofit

- The NDE data structure will permit incorporation of allowances and TE Index data into the COSAL/SNAP product
- Electronic transfer of GPETE allowances to the SNAP data base via ship/shore interfaces
- Provides links to prime weapon system, MRCs, CAL STDs, 3M
- Allows TYCOM sorts on data elements, ships support, and feedback link
- Satisfies IT-21 Battle Group interoperability



# Allowance Development Action

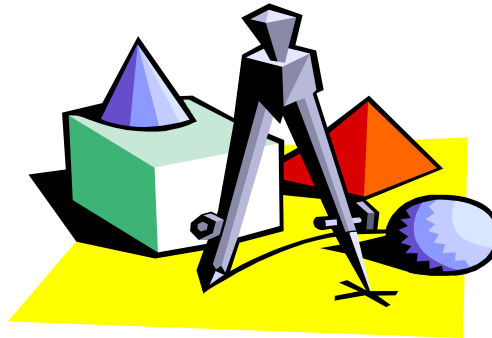
- **Action Item**

- NAVSEA 04L1 will separate GPETE from OSI Retrofit Project and investigate the possibility of implementing GPETE under standard CDMD-OA, and continue to monitor the MAMs inventory tool effort

- **Status**

- Recommend closure. Each piece of test equipment is already handled as its own configuration item (APL & 7-67 series AEL). The GPETE Program will assess utilizing CDMD-OA for making GPETE a configuration item and will continue to monitor the XRIC solution that is being implemented for MAMs

# TMDE Strategic Plan



- **Overview**

- Based on TMDE re-engineering and DoD/DoN guidance
- Solicited and incorporated input from team members
- Implement according to TMDE Action Plan
- Primary goal: increase the overall quality and effectiveness of afloat and ashore TMDE support with efficiencies that focus on cradle-to-grave life cycle support for the program

- **Purpose**

- Help achieve our mission and focused on our vision
- Based on NAVSEA's vision of the future for naval weapon systems and the test equipment that supports those systems and equipment